SEQUENCE LISTING

<110> TAKAIWA, MIKIO

 $\chi^{i}_{i} = r^{i} - \frac{r^{i}}{2 \left(r^{i} - r^{i}\right)} = -\frac{\pi}{4}.$

OKUDA, MITSUYOSHI

SAEKI, KATSUHISA

KUBOTA, HIROMI

HITOMI, JUN

KAGEYAMA, YASUSHI

SHIKATA, SHITSUW

NOMURA, MASAFUMI

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<140> 09/509,814

<141 2000-04-06

<150 PCT/JP98/04528

<151> 1998-10-07

<150> JP 9-274570

<151> 1997-06-08

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Phe Ser Lys Gln Xaa Gln Thr Gly Ala Ala Ala Phe Leu Val Glu Ser 50 55 60

Glu Asn Val Lys Leu Xaa Lys Gly Leu Xaa Lys Lys Leu Glu Thr Val 65 70 75 80

Pro Ala Asn Asn Lys Leu His Ile Xaa Gln Phe Asn Gly Pro Ile Leu 85 90 95

Glu Glu Thr Lys Gln Xaa Leu Glu Xaa Thr Gly Ala Lys Ile Leu Asp

Tyr Ile Pro Asp Tyr Ala Tyr Ile Val Glu Tyr Glu Gly Asp Val Xaa 115 120 125

Ser Xaa Xaa Xaa Ile Glu His Val Glu Ser Val Glu Pro Tyr Leu 130 135 140

 $g^{k-1} = \frac{1}{\sqrt{k}} \left(\frac{k}{\sqrt{k}} - \frac{k}{\sqrt{k}} \right) = 0$

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Ile Val Ala Gly Asn Val Ala Gln Leu Arg Glu His Phe Val Lys Asn

470

465

the transfer of the second

Arg Gly Ile Thr Pro Lys Pro Ser Leu Leu Lys Ala Ala Leu Ile Ala 485 490 495

Gly Ala Ala Asp Xaa Gly Leu Gly Tyr Pro Asn Gly Asn Gln Gly Trp 500 505 510

Gly Arg Val Thr Leu Asp Lys Ser Leu Asn Val Ala Tyr Val Asn Glu 515 520 525

Ser Ser Xaa Leu Ser Thr Ser Gln Lys Ala Thr Tyr Xaa Phe Thr Ala 530 535 540

Thr Ala Gly Lys Pro Leu Lys Ile Ser Leu Val Trp Ser Asp Ala Pro 545 550 555 560

Ala Ser Thr Thr Ala Ser Val Thr Leu Val Asn Asp Leu Asp Leu Val 565 570 575

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Gly Phe Ser Lys Gln Xaa Gln Thr Gly Ala Ala Ala Phe Leu Val Glu
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Ser Glu Asn Val Lys Leu Xaa Lys Gly Leu Xaa Lys Lys Leu Glu Thr
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Val Pro Ala Asn Asn Lys Leu His Ile Xaa Gln Phe Asn Gly Pro Ile 85 90 95

Leu Glu Glu Thr Lys Gln Xaa Leu Glu Xaa Thr Gly Ala Lys Ile Leu
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Xaa Leu Val Lys Ala Xaa Ala Leu Asp Thr Lys Gln Xaa Asn Lys Glu 165 170 175

Val Gln Leu Arg Gly Ile Glu Xaa Ile Ala Gln Xaa Xaa Xaa Ser Asn 180 185 190

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Val Ala Arg Gly Ile Val Lys Ala Asp Val Ala Gln Ser Ser Tyr Gly 210 215 220

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Thr Gly Arg Asn Asp Ser Ser Met His Glu Ala Phe Arg Gly Lys Ile 245 250 255

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Pro Ala Asn Asn Lys Leu His Ile Val Gln Phe Asn Gly Pro Ile Leu

288





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Ber Ser Gly Gly Leu Gly Gly Leu Pro Ser Asn Leu Gln Thr Leu Phe

igo caa goa tto agt goa ggt goo aga att cat aca aac too tgg ggg

310

960

1008



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Phe Ser Lys Gln Arg Gln Thr Gly Ala Ala Ala Phe Leu Val Glu Ser 50 60

Glu Asn Val Lys Leu Leu Lys Gly Leu Leu Lys Lys Leu Glu Thr Val 65 70 75 80

Pro Ala Asn Asn Lys Leu His Ile Val Gln Phe Asn Gly Pro Ile Leu 85 90 95

Glu Glu Thr Lys Gln Lys Leu Glu Thr Thr Gly Ala Lys Ile Leu Asp 100 105 110

J. C. J. C.

Tyr Ile Pro Asp Tyr Ala Tyr Ile Val Glu Tyr Glu Gly Asp Val Gln
115 120 125

Ser Lys Val Arg Ser Ile Glu His Val Glu Ser Val Glu Pro Tyr Leu 130 135 140

Pro Lys Tyr Lys Ile Asp Pro Gln Leu Phe Thr Lys Gly Ala Ser Thr 145 150 155 160

Leu Val Lys Ala Leu Ala Leu Asp Thr Lys Gln Asn Asn Lys Glu Val 165 170 175

Gln Leu Arg Gly Ile Glu Glu Ile Ala Gln Tyr Val Ala Ser Asn Asp 180 185 190

Val His Tyr Ile Thr Ala Lys Pro Glu Tyr Lys Val Met Asn Asp Val

Ala Arg Gly Ile Val Lys Ala Asp Val Ala Gln Ser Ser Tyr Gly Leu 210 220

Tyr Gly Gln Gly Gln Ile Val Ala Val Ala Asp Thr Gly Leu Asp Thr 225 235 240

Gly Arg Asn Asp Ser Ser Met His Glu Ala Phe Arg Gly Lys Ile Thr 245 250 255

Ala Leu Tyr Ala Leu Gly Arg Thr Asn Asn Ala Asn Asp Thr Asn Gly 260 265 270

His Gly Thr His Val Ala Gly Ser Val Leu Gly Asn Gly Ala Thr Asn 275 280 285

Lys Gly Met Ala Pro Gln Ala Asn Leu Val Phe Gln Ser Ile Met Asp 290 295 300

Ser Ser Gly Gly Leu Gly Gly Leu Pro Ser Asn Leu Gln Thr Leu Phe 305 310 315 320

Ser Gln Ala Phe Ser Ala Gly Ala Arg Ile His Thr Asn Ser Trp Gly
325 330 335

Ala Ala Val Asn Gly Ala Tyr Thr Thr Asp Ser Arg Asn Val Asp Asp 340 345 350 Tyr Val Arg Lys Asn Asp Met Thr Ile Leu Phe Ala Ala Gly Asn Glu

1 1 1 1 1 1 1 1 1

LL.

Arg Pro Asn Gly Gly Thr Ile Ser Ala Pro Gly Thr Ala Lys Asn Ala 370 380

Ile Thr Val Gly Ala Thr Glu Asn Leu Arg Pro Ser Phe Gly Ser Tyr 385 390 395 400

Ala Asp Asn Ile Asn His Val Ala Gln Phe Ser Ser Arg Gly Pro Thr 405 410 415

Lys Asp Gly Arg Ile Lys Pro Asp Val Met Ala Pro Gly Thr Tyr Ile 420 425 430

Leu Ser Ala Arg Ser Ser Leu Ala Pro Asp Ser Ser Phe Trp Ala Asn 445

His Asp Ser Lys Tyr Ala Tyr Met Gly Gly Thr Ser Met Ala Thr Pro

Ile Val Ala Gly Asn Val Ala Gln Leu Arg Glu His Phe Val Lys Asn 465 470 475 480

Arg CLy Ile Thr Pro Lys Pro Ser Leu Leu Lys Ala Ala Leu Ile Ala

Gly Ala Ala Asp Val Gly Leu Gly Tyr Pro Asn Gly Asn Gln Gly Trp 500 505 510

Gly Arg Val Thr Leu Asp Lys Ser Leu Asn Val Ala Tyr Val Asn Glu 515 520 525

Ser Ser Ala Leu Ser Thr Ser Gln Lys Ala Thr Tyr Thr Phe Thr Ala 530 535 540

Thr Ala Gly Lys Pro Leu Lys Ile Ser Leu Val Trp Ser Asp Ala Pro 545 550 555 560

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Pro Phe Asp Asn Asn Trp Asp Gly Arg Asn Asn Val Glu Asn Val Phe 595 600 605

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A Comment

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85 90 95

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A Company

Asp	Tyr	7 Val	. Arg	l Lys	Asn	Asp	Met 360		Ile	Leu	Phe	Ala 365	Ala	Gly	Asn	1104
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1 1 1 1

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Tyr 625	ASI	gta Val	ccg Pro	gtt Val	gga Gly 630	Pro	cag Gln	acc Thr	tto Phe	tcg Ser 635	Let	gca Ala	att Ile	gtg Val	aat Asn 640	1920	1
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Ile	Leu	Ser	Thr 20	Val	Ala	Leu	Ser	Asn 25	Pro	Ser	Ala	Gly	Gly 30	Ala	Arg		
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Leu Pro Ile Tyr Arg Ile Asp Pro Gln Leu Phe Thr Lys Gly Ala Ser 145 150 155 160

Glu Leu Val Lys Ala Val Ala Leu Asp Thr Lys Gln Lys Asn Lys Glu 165 170 175

Val Gln Leu Arg Gly Ile Glu Gln Ile Ala Gln Phe Ala Ile Ser Asn 180 185 190

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Val Ala Arg Gly Ile Val Lys Ala Asp Val Ala Gln Ser Ser Tyr Gly
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245 250 255

Thr Ala Leu Tyr Ala Leu Gly Arg Thr Asn Asn Ala Asn Asp Thr Asn 260 265 270

Gly His Gly Thr His Val Ala Gly Ser Val Leu Gly Asn Gly Ser Thr 285

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Asp Ser Gly Gly Gly Leu Gly Gly Leu Pro Ser Asn Leu Gln Thr Leu 305 310 315

Phe Ser Gln Ala Tyr Ser Ala Gly Ala Arg Ile His Thr Asn Ser Trp 325 330 335

Gly Ala Ala Val Asn Gly Ala Tyr Thr Thr Asp Ser Arg Asn Val Asp 340 345 350

Asp Tyr Val Arg Lys Asn Asp Met Thr Ile Leu Phe Ala Ala Gly Asn 355 360 365

Glu Gly Pro Asn Gly Gly Thr Ile Ser Ala Pro Gly Thr Ala Lys Asn 370 375 380

Ala Ile Thr Val Gly Ala Thr Glu Asn Leu Arg Pro Ser Phe Gly Ser 385 390 395 400

Tyr Ala Asp Asn Ile Asn His Val Ala Gln Phe Ser Ser Arg Gly Pro 405 410 415

Thr Lys Asp Gly Arg Ile Lys Pro Asp Val Met Ala Pro Gly Thr Phe 420 425 430

Ile Leu Ser Ala Arg Ser Ser Leu Ala Pro Asp Ser Ser Phe Trp Ala 435 440 445

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Ala Gly Ala Ala Asp Ile Gly Leu Gly Tyr Pro Asn Gly Asn Gln Gly
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510

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Ala Thr Ala Gly Lys Pro Leu Lys Ile Ser Leu Val Trp Ser Asp Ala 545 550 555 560

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Val Ile Thr Ala Pro Asn Gly Thr Gln Tyr Val Gly Asn Asp Phe Thr 580 585 590

Ser Pro Tyr Asn Asp Asn Trp Asp Gly Arg Asn Asn Val Glu Asn Val 595 600 605

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Asp Tyr Ile Pro Asp Tyr Ala Tyr Ile Val Glu Tyr Glu Gly Asp Val

120

115

384

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tc <u>c</u> Ser	g cca Pro	tac Typ 595	: Asr	gat 1 Asp	aac Asr	tgg Trp	gat Asp 600	Gly	c cgc / Arg	aat Ası	aad Asi	gta Na: 60!	l Glı	a aat 1 Asi	t gta n Val	1824

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taa														٠		1923
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130 135

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Leu Pro Ile Tyr Arg Ile Asp Pro Gln Leu Phe Thr Lys Gly Ala Ser 145 150 155 160

Glu Leu Val Lys Ala Val Ala Leu Asp Thr Lys Gln Lys Asn Lys Glu 165 170 175

Val Gln Leu Arg Gly Ile Glu Gln Ile Ala Gln Phe Ala Ile Ser Asn 180 185 190

Asp Val Leu Tyr Ile Thr Ala Lys Pro Glu Tyr Lys Val Met Asn Asp 195 200 205

Val Ala Arg Gly Ile Val Lys Ala Asp Val Ala Gln Ser Ser Tyr Gly 210 215 220

Leu Tyr Gly Gln Gly Gln Ile Val Ala Val Ala Asp Thr Gly Leu Asp 225 230 235

Thr ely Arg Asn Asp Ser Ser Met His Glu Ala Phe Arg Gly Lys Ile
245
250
255

Thr Ala Leu Tyr Ala Leu Gly Arg Thr Asn Asn Ala Asn Asp Thr Asn 260 265 270

Gly His Gly Thr His Val Ala Gly Ser Val Leu Gly Asn Gly Ser Thr 275 280 285

AsmaLys Gly Met Ala Pro Gln Ala Asn Leu Val Phe Gln Ser Ile Met 290 295 300

Asp Ser Gly Gly Gly Leu Gly Gly Leu Pro Ser Asn Leu Gln Thr Leu 305 310 315 320

Phe Ser Gln Ala Tyr Ser Ala Gly Ala Arg Ile His Thr Asn Ser Trp 325 330 335

Gly Ala Ala Val Asn Gly Ala Tyr Thr Thr Asp Ser Arg Asn Val Asp 340 345 350

Asp Tyr Val Arg Lys Asn Asp Met Thr Ile Leu Phe Ala Ala Gly Asn 355 360 365

Glu Gly Pro Asn Gly Gly Thr Ile Ser Ala Pro Gly Thr Ala Lys Asn 370 380

Ala Ile Thr Val Gly Ala Thr Glu Asn Leu Arg Pro Ser Phe Gly Ser

Tyr Ala Asp Asn Ile Asn His Val Ala Gln Phe Ser Ser Arg Gly Pro 405 410 415

Thr Lys Asp Gly Arg Ile Lys Pro Asp Val Met Ala Pro Gly Thr Phe 420 425 430

Ile Leu Ser Ala Arg Ser Ser Leu Ala Pro Asp Ser Ser Phe Trp Ala 435 440 445

Asn His Asp Ser Lys Tyr Ala Tyr Met Gly Gly Thr Ser Met Ala Thr 450 455 460

Pro Ile Val Ala Gly Asn Val Ala Gln Leu Arg Glu His Phe Val Lys 465 470 475 480

Asn Arg Gly Ile Thr Pro Lys Pro Ser Leu Leu Lys Ala Ala Leu Ile 485

ı,D

Ala Cly Ala Ala Asp Ile Gly Leu Gly Tyr Pro Asn Gly Asn Gln Gly 500 505 510

Trp Gly Arg Val Thr Leu Asp Lys Ser Leu Asn Val Ala Tyr Val Asn 515 520 525

Glu Ser Ser Ser Leu Ser Thr Ser Gln Lys Ala Thr Tyr Ser Phe Thr 530 535 540

Ala Thr Ala Gly Lys Pro Leu Lys Ile Ser Leu Val Trp Ser Asp Ala 545 550 555 560

Pro Ala Ser Thr Thr Ala Ser Val Thr Leu Val Asn Asp Leu Asp Leu 565 570 575

Val Ile Thr Ala Pro Asn Gly Thr Gln Tyr Val Gly Asn Asp Phe Thr 580 585 590

Ser Pro Tyr Asn Asp Asn Trp Asp Gly Arg Asn Asn Val Glu Asn Val
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p v i v c

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Phe	Asp	Leu	Asp	Phe	Lys	Gly	lle	Gln	Thr	Thr	Thr	Asp	Xaa	Xaa	Gly
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65					70					75					80
Pro	Ala	Asn	Asn	Lys	Leu	His	Ile	Xaa	Gln	Phe	Asn	Gly	Pro	Ile	Leu
	٠			85					90					95	
Glu	Glu	Thr	Lys	Gln	Xaa	Leu	Glu	Xaa	Thr	Gly	Ala	Lys	Ile	Leu	Asp
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Tyr	Ile	Pro	Asp	Tyr	Ala	Tyr	Ile	Val	Glu	Tyr	Glu	Gly	Asp	Val	Xaa
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Ser	Xaa	Xaa	Xaa	Xaa	Ile	Glu	His	Val	Glu	Ser	Val	Glu	Pro	Tyr	Leu
	130			•		135					140				
Pro	Xaa	Tyr	Xaa	Ile	Asp	Pro	Gln	Leu	Phe	Thr	Lys	Gly	Ala	Ser	Xaa
145					150					155					160
Leu	Val	Lys	Ala	Xaa	Ala	Leu	Asp	Thr	Lys	Gln	Xaa	Asn	Lys	Glu	Val
				165					170					175	
Gln	Leu	Arg	Gly	lle	Glu	Xaa	lle	Ala	Gln	Xaa	Xaa	Xaa	Ser	Asn	Asp
			180					185					190		
Val	Xaa	Tyr	lle	Thr	Ala	Lys	Pro	Glu	Tyr	Lys	Val	Met	Asn	Asp	Val
		195					200					205			

Ala	Arg	Gly	Ile	Val	Lys	Ala	Asp	Val	Ala	Gln	Ser	Ser	Tyr	Gly	Leu
	210					215					220				
Tyr	Gly	Gln	Gly	Gln	lle	Val	Ala	Val	Ala	Asp	Thr	Gly	Leu	Asp	Thr
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Gly	Arg	Asn	Asp	Ser	Ser	Met	His	Glu	Ala	Phe	Arg	Gly	Lys	[le	Thr
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Ala	Leu	Tyr	Ala	Leu	Gly	Arg	Thr	Asn	Asn	Ala	Asn	Asp	Thr	Asn	Gly
			260					265					270		
His	Gly	Thr	His	Val	Ala	Gly	Ser	Val	Leu	Gly	Asn	Gly	Xaa	Thr	Asn
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Lys	Gly	Met	Ala	Pro	Gln	Ala	Asn	Leu	Val	Phe	Gln	Ser	Ile	Меt	Asp
	290					295					300				
Ser	Xaa	Gly	Gly	Leu	Gly	Gly	Leu	Pro	Ser	Asn	Leu	Gln	Thr	Leu	Phe
305					310					315					320
Ser	Gln	Ala	Xaa	Ser	Ala	Gly	Ala	Arg	[le	His	Thr	Asn	Ser	Trp	Gly
				325					330					335	
Ala	Ala	Val	Asn	Gly	Ala	Tyr	Thr	Thr	Asp	Ser	Arg	Asn	Val	Asp	Asp
			340					345					350		
Tyr	Val	Arg	Lys	Asn	Asp	Met	Thr	lle	Leu	Phe	Ala	Ala	Gly	Asn	Glu
		355					360					365			
Xaa	Pro	Asn	Gly	Gly	Thr	lle	Ser	Ala	Pro	Gly	Thr	Ala	Lys	Asn	Ala
	370					375					380				
lle	Thr	Val	Gly	Ala	Thr	Glu	Asn	Leu	Arg	Pro	Ser	Phe	Gly	Ser	
385					390					395					400
Ala	Asp	Asn	lle	Asn	His	Val	Ala	Gln	Phe	Ser	Ser	· Arg	Gly	'Pro	
				105					410)				415	

Lys	Asp	Gly	Arg	[le	Lys	Pro	Asp	Val	Met	Ala	Pro	Gly	Thr	Xaa	lle
			420					425					430		
Leu	Ser	Ala	Arg	Ser	Ser	Leu	Ala	Pro	Asp	Ser	Ser	Phe	Trp	Ala	Asn
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His	Asp	Ser	Lys	Tyr	Ala	Tyr	Met	Gly	Gly	Thr	Ser	Met	Ala	Thr	Pro
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Ile	Val	Ala	Gly	Asn	Val	Ala	Gln	Leu	Arg	Glu	His	Phe	Val	Lys	Asn
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Arg	Gly	Ile	Thr	Pro	Lys	Pro	Ser	Leu	Leu	Lys	Ala	Ala	Leu	Ile	Ala
				485					490					495	
Gly	Ala	Ala	Asp	Xaa	Gly	Leu	Gly	Tyr	Pro	Asn	Gly	Asn	Gln	Gly	Trp
			500					505				-	510		
Gly	Arg	Val	Thr	Leu	Asp	Lys	Ser	Leu	Asn	Val	Ala	Tyr	Val	Asn	Glu
		515					520					525			
Ser	Ser	Xaa	Leu	Ser	Thr	Ser	Gln	Lys	Ala	Thr	Tyr	Xaa	Phe	Thr	Ala
	530					535					540				
Thr	Ala	Gly	Lys	Pro	Leu	Lys	Ile	Ser	Leu	Val	Trp	Ser	Asp	Ala	Pro
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Ala	Ser	Thr	Thr	Ala	Ser	Val	Thr	Leu	ı Val	Asn	Asp	Leu	Asp	Leu	Val
				565					570)				575	
Ile	Thr	Ala	Pro	Asn	Gly	Thr	Xaa	. Tyr	· Val	Gly	Ası	n Asp	Phe	: Xaa	. Xaa
			580					585	5				590)	
Pro	Xaa	. Xaa	Xaa	Asn	Trp	Asp	Gly	'Arg	g Asr	ı Asr	ı Va	l Glu	ı Asr	n Val	Phe
		595					600)				605	5		
lle	: Asn	Xaa	Pro	Gln	Ser	Gly	' Thr	Туг	r Thi	- []6	e Gl	u Val	l Glr	n Ala	a Tyr
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10

15

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20

25

30

Xaa Phe Asp Leu Asp Phe Lys Gly Ile Gln Thr Thr Thr Asp Xaa Xaa

35

40

45

Gly Phe Ser Lys Gln Xaa Gln Thr Gly Ala Ala Ala Phe Leu Val Glu

50

55

60

Ser Glu Asn Val Lys Leu Xaa Lys Gly Leu Xaa Lys Lys Leu Glu Thr

65

70

75

80

Val Pro Ala Asn Asn Lys Leu His Ile Xaa Gln Phe Asn Gly Pro Ile

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Asp	Tyr	lle	Pro	Asp	Tyr	Ala	Tyr	lle	Val	Glu	Tyr	Glu	Gly	Asp	Val
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Xaa	Leu	Val	Lys	Ala	Xaa	Ala	Leu	Asp	Thr	Lys	Gln	Xaa	Asn	Lys	Glu
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Val	Ala	Arg	Gly	Ile	Val	Lys	Ala	Asp	Val	Ala	Gln	Ser	Ser	Tyr	Gly
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Leu	Tyr	Gly	Gln	Gly	Gln	Ile	Val	Ala	Val	Ala	Asp	Thr	Gly	Leu	Asp
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Gly	His	Gly	Thr	His	Val	Ala	Gly	Ser	Val	Leu	Gly	Asn	Gly	Xaa	Thr
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Phe	Ser	Gln	Ala	Xaa	Ser	Ala	Gly	Ala	Arg	lle	His	Thr	Asn	Ser	Trp
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Gly	Ala	Ala	Val	Asn	Gly	Ala	Tyr	Thr	Thr	Asp	Ser	Arg	Asn	Val	Asp
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Pro	Ala	Ser	Thr	Thr	Ala	Ser	Val	Thr	Leu	Val	Asn	Asp	Leu	Аѕр	Leu
				565					570					575	
Val	Ile	Thr	110	Dwa	1	٠.									
		1111	Ala	PIU	ASII	Gly	Thr	Xaa	Tyr	Val	Gly	Asn	Asp	Phe	Xaa
		1111	580	PIO	ASII	Gly	Thr	Xaa 585	Tyr	Val	Gly		Asp 590	Phe	Xaa
Xaa			580					585					590	Phe Asn	
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	ttt	gat	ctg	gat	ttt	aaa	gga	att	caa	aca	aca	acc	gat	gtc	agt	ggt	144
	Phe	Asp	Leu	Asp	Phe	Lys	Gly	Ile	Gln	Thr	Thr	Thr	Asp	Val	Ser	Gly	
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T.	Phe	Ser	Lys	Gln	Arg	Gln	Thr	Gly	Ala	Ala	Ala	Phe	Leu	Val	Glu	Ser	
ff and their half ban that that their their		50					55					60					
1	gaa	aat	gtg	aaa	ctt	ctt	aaa	gga	ttg	cta	aag	aaa	cŧt	gaa	aca	gta	240
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	Pro	Ala	Asn	Asn	Lys	Leu	His	Ile	Val	Gln	Phe	Asn	Gly	Pro	Ile	Leu	
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	gaa	gaa	aca	aaa	cag	aag	cta	gag	aca	act	gga	gca	aag	att	ctc	gac	336
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Bacillus sp.

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Ile Leu Ser Thr Val Ala Leu Ser Asn Pro Ser Ala Gly Gly Ala Arg
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					_										atg	912
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															tta	960
Asp	Ser	(i) V	GV	(i V	t.eu	(i V	(i V	Len	Pro	Ser	Asn	1.611	Gin	Thr	Leu	

ttc agc caa gca tac agt gct ggt gcc aga att cat aca aac tcc tgg 1008 Phe Ser Gln Ala Tyr Ser Ala Gly Ala Arg Ile His Thr Asn Ser Trp gga gca gca gtg aat ggg gct tac aca aca gat tcc aga aat gtg gat 1056 Gly Ala Ala Val Asn Gly Ala Tyr Thr Thr Asp Ser Arg Asn Val Asp gac tat gtg cgc aaa aat gat atg acg atc ctt ttc gct gcc ggg aat 1104 Asp Tyr Val Arg Lys Asn Asp Met Thr Ile Leu Phe Ala Ala Gly Asn gaa gga ccg aac ggc gga acc atc agt gca cca ggc aca gct aaa aat 1152 Glu Gly Pro Asn Gly Gly Thr Ile Ser Ala Pro Gly Thr Ala Lys Asn gca ata aca gtc gga gct acg gaa aac ctc cgc cca agc ttt ggg tct 1200 Ala Ile Thr Val Gly Ala Thr Glu Asn Leu Arg Pro Ser Phe Gly Ser tat gcg gac aat atc aac cat gtg gca cag ttc tct tca cgt gga ccg 1248 Tyr Ala Asp Asn Ile Asn His Val Ala Gln Phe Ser Ser Arg Gly Pro aca aag gat gga cgg atc aaa ccg gat gtc atg gca ccg gga acg ttc 1296 Thr Lys Asp Gly Arg Ile Lys Pro Asp Val Met Ala Pro Gly Thr Phe ata cta tca gca aga tct tct ctt gca ccg gat tcc tcc ttc tgg gcg 1344 Ile Leu Ser Ala Arg Ser Ser Leu Ala Pro Asp Ser Ser Phe Trp Ala aac cat gac agt aaa tat gca tac atg ggt gga acg tcc atg gct aca 1392

Asn His Asp Ser Lys Tyr Ala Tyr Met Gly Gly Thr Ser Met Ala Thr ccg atc gtt gct gga aac gtg gca cag ctt cgt gag cat ttt gtg aaa 1440 Pro Ile Val Ala Gly Asn Val Ala Gln Leu Arg Glu His Phe Val Lys aac aga ggc atc aca cca aag cct tct cta tta aaa gcg gca ctg att 1488 Asn Arg Gly Ile Thr Pro Lys Pro Ser Leu Leu Lys Ala Ala Leu Ile gcc ggt gca gct gac atc ggc ctt ggc tac ccg aac ggt aac caa gga 1536 Ala Gly Ala Ala Asp Ile Gly Leu Gly Tyr Pro Asn Gly Asn Gln Gly tgg gga cga gtg aca ttg gat aaa tcc ctg aac gtt gcc tat gtg aac 1584 Trp Gly Arg Val Thr Leu Asp Lys Ser Leu Asn Val Ala Tyr Val Asn gag tcc agt tct cta tcc acc agc caa aaa gcg acg tac tcg ttt act 1632 Glu Ser Ser Ser Leu Ser Thr Ser Gln Lys Ala Thr Tyr Ser Phe Thr gct act gcc ggc aag cct ttg aaa atc tcc ctg gta tgg tct gat gcc 1680 Ala Thr Ala Gly Lys Pro Leu Lys Ile Ser Leu Val Trp Ser Asp Ala cct gcg agc aca act gct tcc gta acg ctt gtc aat gat ctg gac ctt 1728 Pro Ala Ser Thr Thr Ala Ser Val Thr Leu Val Asn Asp Leu Asp Leu gtc att acc gct cca aat ggc aca cag tat gta gga aat gac ttt act 1776 Val Ile Thr Ala Pro Asn Gly Thr Gln Tyr Val Gly Asn Asp Phe Thr

tcg cca tac aat gat aac tgg gat ggc cgc aat aac gta gaa aat gta 1824 Ser Pro Tyr Asn Asp Asn Trp Asp Gly Arg Asn Asn Val Glu Asn Val 595 600 605 ttt att aat gca cca caa agc ggg acg tat aca att gaa gta cag gct 1872 Phe Ile Asn Ala Pro Gln Ser Gly Thr Tyr Thr Ile Glu Val Gln Ala 610 615 620 tat aac gta ccg gtt gga cca cag aac ttc tcg ttg gca att gtg aat 1920 Tyr Asn Val Pro Val Gly Pro Gln Asn Phe Ser Leu Ala Ile Val Asn 625 630 635 640 1923 taa